Water Security Agency

Plan for 2013-14

Government of Saskatchewan

PLAN FOR 2013-14

Statement from the Minister

I am pleased to present the Saskatchewan Water Security Agency's first annual plan.

The Water Security Agency was created in October 2012 to bring all aspects of water management together and to provide a one window approach to service for citizens. The Water Security Agency is mandated to ensure protection of water quality, maintenance of aquatic habitats and sustainable water supplies and to lead implementation of the 25 Year Saskatchewan Water Security Plan.

The Government's Direction and Budget for 2013-14 are built on the principle of *Balanced Growth*, supporting an ongoing focus on sound economic growth and shared prosperity.

Development of the 25 Year Saskatchewan Water Security Plan was an important step by our Government to support the principle of Balanced Growth. This annual plan is focused on achieving the vision of the 25 Year Water Security Plan, "Water supporting economic growth, quality of life and environmental well being."

The Water Security Agency will report on progress made toward this plan, within the financial parameters provided, in the 2013-14 Annual Report.

The Honourable Ken Cheveldayoff
Minister Responsible for Saskatchewan Water Security Agency

Response to Government Direction

The government remains committed to further establishing Saskatchewan as the best place to live, work and raise a family.

The Saskatchewan Plan for Growth – Vision 2020 and Beyond identifies principles, goals and actions to ensure Saskatchewan continues to benefit from the opportunities and meet the challenges of a growing province. Keeping government's focus on *Balanced Growth*, the plan outlines the key activities that the Government of Saskatchewan will undertake in pursuit of sustained, disciplined growth and a better Saskatchewan.

Government's Vision

"...a strong and growing Saskatchewan, the best place in Canada – to live, to work, to start a business, to get an education, to raise a family and to build a life."

Sustaining growth and opportunities for Saskatchewan people	Improving our quality of life	Making life more affordable	Delivering responsive and responsible government

Government's vision and four goals provide the framework for ministries, agencies and third parties to focus on achieving greater success in the delivery of government services. *The Saskatchewan Plan for Growth – Vision 2020 and Beyond* provides the enabling strategies and actions that the Government of Saskatchewan will undertake to build a strong and growing Saskatchewan. The 2013-14 budget theme of *Balanced Growth* reflects the government's commitment to achieving the Saskatchewan Plan for Growth.

All ministries and agencies will report on progress and results achieved in their 2013-14 annual reports. This honours government's commitment to keep its promises and ensures greater transparency and accountability to the people of Saskatchewan.

Mission, Strategies and Actions

Mission Statement

The Water Security Agency integrates all aspects of water management to ensure sustainable water supplies, safe drinking water, safe and effective infrastructure, protection of water quality and aquatic habitats.

Strategy

Ensure the sustainability of our surface and ground water supplies

Key Actions

- Evaluate applications for water use to determine sustainability and impact on other users and decide whether to allocate requested water supplies.
- Undertake water management modeling of the South Saskatchewan River System.
- Develop a Water Resource Management Model for the South Saskatchewan River System.
- Develop predictive water quality and fish habitat models for the Qu'Appelle River system to evaluate local and cumulative effects of new requests for water.
- Initiate review of existing water rights licenses on a priority basis.
- Develop sector specific materials such as fact sheets on conservation and efficiency best practices.
- Identify options for increasing water use efficiencies through regulatory methods.
- Continue development of climate change adaptation strategies through investigation of new opportunities for conservation.

Strategy

Ensure our drinking water is safe

Key Actions

- Ensure the provision of safe drinking water through inspections, monitoring, reporting, education and compliance follow-up for WSA regulated waterworks.
- Review and revise current educational materials to ensure these are current and effective means to inform water purveyors and consumers.
- Post any revised fact sheets and educational materials on WSA website, and promote educational efforts through SUMA, SARM and the Saskatchewan Association of Rural Water Pipelines meetings and publications.
- Develop and distribute factsheets on managing drinking water production during flood events through promotional efforts with SUMA, SARM and the Saskatchewan Public Works Association meetings and publications.
- Encourage consideration of conversion to regional systems during waterworks upgrade evaluation and pre-design plan review.

Photo Credit: Enterprise Saskatchewan, Greg Huszar Photography, Mosaic Belle Plaine site

Key Actions (Continued)

- Support and work with SaskWater to evaluate and assess (with federal and First Nations governments) opportunities for the province to provide infrastructure, including connections to regional water systems, and technical and inspection services on reserves on a cost-recovery basis.
- Initiate study to consider the application of Point of Entry water treatment devices for use on treated and raw water pipelines in rural Saskatchewan
- Consult with 2002 Long-Term Safe Drinking Water Strategy partners on the status of actions under this former strategy.
- As part of review of the approach to safe drinking water under the 25 Year Water Security Plan, consider and evaluate the regulatory regime applicable to semi-public systems.
- Continue to develop drinking water guidelines for WSA regulated water treatment plants in the province.
- Continue to develop codes of practice, guidelines, best management practices and design standards for WSA regulated wastewater and biosolids treatment facilities in the province.
- Continue to collect source and treated drinking water samples from selective affected communities in the province to identify parameter exceedence, assess the performance/and or evaluate the treatment system provided by the communities, conduct research if needed to assess the risk.

Strategy

Ensure wastewater is effectively managed

Key Actions

- Protect source water by ensuring effective treatment and management of waste water, through inspections, monitoring, reporting, education and compliance follow-up for Water Security Agency regulated wastewater works.
- Through Canadian Council of Ministers of the Environment effluent characterization – determine priority wastewater facilities requiring upgrading.
- Consider and, if needed, negotiate an Administration Agreement or Equivalency Agreement with Environment Canada for implementation of the federal Wastewater System Effluent Regulations by the Water Security Agency in Saskatchewan.
- Conduct needed effluent characterization and aid sewage works owners in developing site specific discharge criteria to advance implementation of the Canadian Council of Ministers of the Environment Municipal Waste Water Effluent standards.
- Evaluate guidelines for on-site wastewater management and disposal, including an interjurisdictional review of on-site wastewater management practices.

Photo Credit: Tourism Saskatoon, Broadway Bridge

Strategy

Ensure water quality, aquatic habitat and aquatic ecosystem function is sustained

Key Actions

- Define water quality objectives for the Qu'Appelle River system.
- Continue community-based watershed planning, including piloting a revised watershed planning process with the Old Wives Lake Watershed.
- Work with Saskatchewan Association of Watersheds to more clearly identify the future roles and responsibilities of watershed and aquifer planning groups, including the renewal of source water protection plans.
- Evaluate the need to expand source water protection planning to additional watersheds or aquifers.
- Assess and renew the approach to implementing source water protection plans to ensure that threats to source water are mitigated into the future.
- Provide information and encourage the implementation of beneficial land and water management practices to reduce non-point sources of nutrients and other contaminants to surface and groundwater.
- Continue to partner with the Prairie Habitat Joint Venture to promote the conservation of wetland and associated upland habitat
- Initiate work on new provincial wetland policy.
- Evaluate current minimum environmental flow objective for the Qu'Appelle River system.
- Continue to annually assess impacts of water management on the Piping Plover population at Lake Diefenbaker and implement the conservation plan.
- Draft a strategy to reduce contamination risk posed to groundwater sources by abandoned water wells.

Strategy

Ensure Water Security Agency infrastructure safely meets water supply and management needs

Key Actions

- Review and update the Water Security Agency's 10 year plan for infrastructure rehabilitation and dam safety.
- Complete an emergency preparedness plan for the Qu'Appelle River Dam and review same with stakeholders.
- Undertake the following dam safety activities to assess and manage the risks associated with the Water Security Agency's dams:
  - Prepare and test emergency response plans for Rafferty, Alameda, Gardiner & Qu'Appelle River dams;
  - Commission an independent Dam Safety Review of Alameda Dam;
  - Design and install an early warning dam breach identification system at Rafferty, Alameda and Qu'Appelle River dams;
  - Complete geotechnical, operation and maintenance and maintenance reports for Gardiner, Qu'Appelle River, Rafferty and Alameda dams.

Photo Credit: Ministry of Parks, Culture and Sport, Greg Huszar Photography, Dock Jumpers

Key Actions (Continued)

- Undertake rehabilitation of priority works, including the following:
  - M1 Canal – Enlarge and line another ≈1.75 km of canal as a continuation of the planned rehabilitation program.
  - East Side Pump Station – Install pump monitoring instrumentation including flow meters to complete the planned rehabilitation work.
  - Gardiner Dam – Tender and construct electrical system upgrades for spillway gates and replace all motors on spillway gate hoists.
  - Boundary to Rafferty Diversion Channel - Repair erosion to diversion channel resulting from 2011 flood flows.
  - Alameda Dam - Complete geotechnical and structural assessments and develop feasibility level options for necessary upgrades.
- Complete new reservoir operating plan for Lake Diefenbaker.
- As a member of the International Souris River Board, co-lead on development of a Souris River Basin management plan.
- Finalize interim reservoir operation plans for Rafferty and Alameda reservoirs.
- Continue to manage Water Security Agency lands to meet responsibilities for ecosystem health, source water protection and infrastructure management.

Strategy

Develop or acquire new infrastructure to meet water supply and management needs

Key Actions

- Continue to investigate, design and implement maintenance measures to restore in the short term some or all of the original flow capacity of the Upper Qu'Appelle channel.
- Investigate alternative measures to increase the delivery of water from Lake Diefenbaker to Buffalo Pound Lake in the long term, including evaluation of the feasibility of the Qu'Appelle South irrigation project.
- Continue discussions with Canada to transfer federally-owned infrastructure to the Water Security Agency where appropriate to meet provincial interests.
- Pursue negotiations to transfer Agriculture and Agri-Food's Qu'Appelle water control structures to the Water Security Agency along with appropriate compensation.

Photo Credit: Ministry of Parks, Culture, and Sport, photo by Paul Austring, Blue Sky over Duck Mountain

Strategy

Reduce risk of flood, drainage, and drought damages in the province

Key Actions

- Provide real time hydrometric information for emergency preparedness, flood mitigation, and flood response.
- Assess potential spring runoff and flood risk, forecast flood risk and notify potentially impacted communities of flood risk.
- Provide emergency advice on flood protection measures.
- Continue to work with provincial and federal partners to develop a long-term flood mitigation program.
- Update frequency analysis for hydrologic record for reviewed and published hydrometric station records.
- Explore common approaches and partnership opportunities regarding flood forecasting with Alberta, Manitoba, and Canada.
- Develop a strategy to ensure communities and the public have access to flood hazard information and are aware of potential flood risks.
- Develop a strategy to undertake a flood risk assessment of municipal drinking water and wastewater infrastructure.
- Complete construction cleanup relating to the constructed channel below Fishing Lake and assess options to convert emergency flood control berms around Fishing Lake to permanent works.
- Investigate drainage complaints, make recommendations or orders as appropriate, and undertake required enforcement.
- Continue to support maintenance of organized drainage and channel clearing through the Water Control Program.
- Continue work with federal and provincial government, non-government, industry and research partners on climate change impacts to identify possibilities for adaptation.
- Continue to support the Ministry of Agriculture's work to develop a coordinated provincial drought response plan that includes monitoring, preparedness, response, and recovery approaches.

Photo Credit: Courtesy of Enterprise Saskatchewan, Sub-surface Geological Lab

Strategy

Ensure adequate water information is available to support decision making

Key Actions

- Continue the multi-year Water Availability Study, a $7.5 million project to develop the information on water supply and water use needed to support sustainable water resource decisions that can address economic growth and adjust to changes in our water supply due to climate change. Activities for 2013-14 include:
  - Development of a detailed aquifer map for the southeast Saskatchewan aquifer systems;
  - Analysis of the water supply situation in the South Saskatchewan River System;
  - Continued work to determine the existing water use by sector and delineated by the major basin;
  - Initiation of Value of Water study and consideration of results in the development of water allocation policy.
  - Continue Environmental Instream Flow Needs assessments for priority systems
- Develop process by which an annual report on water use by sector will be prepared.
- Prepare a "State of the Aquifer System" report for Regina East aquifers.
- Continue to collect and analyze water quality data from the 23 provincial primary monitoring stations.
- Continue to collect and assess water quality data from critical sites to determine ecosystem health status and trends and inform decision making.
- Initiate review of the provincial primary water quality station monitoring program.
- Operate 300 hydrometric stations with Canada through the federal-provincial hydrometric network.
- Work with the National Administrators Table on review of the federal role in the hydrometric network.
- Finalize a plan to address the hydrometric data backlog so information is available for water supply evaluations.
- Continue to operate the 70 station provincial groundwater monitoring network (the observation well network).
- Evaluate application and ongoing use of the Saskatchewan Environment Environmental Management System database and SaskH2O website for public delivery of drinking water and wastewater quality information.
- Support the work of the Global Institute for Water Security at the University of Saskatchewan in their assessment of the water supply and quality issues in Saskatchewan systems.
- Identify opportunities to collaborate with external academic and research partners on defining and undertaking strategic research initiatives.
- Produce the State of the Watershed Report in a web-based format.

Photo Credit: Ministry of Parks, Culture and Sport, Greg Huszar Photography, Elbow Marina

Strategy

Engage and inform stakeholders and the public regarding water issues

Key Actions

- Support creation of a Provincial Water Council with sector-based representation.
- Review and revise guidance for application of precautionary drinking water advisories and emergency boil water orders for WSA regulated waterworks.
- Annually report on progress in implementing the 25 Year Saskatchewan Water Security Plan.

Strategy

Work cooperatively with other governments and government agencies to ensure effective water management in Saskatchewan

Key Actions

- Establish provincial Deputy Ministers' Water Committee.
- Support the work of the Council of the Federation Water Stewardship working group to develop and implement strategies for national sharing of water information and data.
- Co-lead the Council of the Federation Value for Water and State of Private Wells Reports.
- Ensure all obligations under transboundary water sharing agreements, including the Prairie Provinces Water Board (PPWB), are met.
- Work with the PPWB Committee on Groundwater to develop a groundwater sharing agreement. Specifically, continue to work with the PPWB through to Board Approval of Schedule F.
- Review fish tissue data and monitoring program for PPWB sites. Develop PPWB management response protocol for water quality and fish tissue objective excursions.
- Continue to work with the International Souris River Board of the International Joint Commission and the Task Force.
- In compliance with the International Souris River Basin Agreement, continue to collect and assess water quality data from critical sites to determine ecosystem health status and trends and inform decision making.
- Continue ongoing participation on the Canadian Council of Ministers of the Environment Water Quality Task Group that establishes national surface water quality guidelines.
- Continue to represent the province on the Canadian Council of the Minister of Environment Water Coordinating Committee.
- Represent the province on the Mackenzie River Basin Board and lead the Alberta-Saskatchewan bilateral water management agreement negotiation process for the province to fulfill the obligations of the Mackenzie River Basin Transboundary Waters Master Agreement.
- Represent Saskatchewan on the Adaptation Platform led by the Climate Change Impacts and Adaptation Division of Natural Resources Canada, and disseminate information from the Platform to provincial policy makers.

Photo Credit: Ministry of Parks, Culture and Sport, Hans-Gerhard Pfaff, Downtown Regina

Key Actions (Continued)

- Continue to work cooperatively to administer the Manitoba-Saskatchewan Fishing Lake Channel Operating Agreement.
- Work with the International Joint Commission, local users and Montana officials to ensure the terms of the 1921 Order for the St. Mary and Milk Rivers are met.

Strategy

Work toward reconciliation in water management while meeting legal responsibilities for consultation and accommodation of First Nations and Métis communities

Key Actions

- Work toward improved models for engagement with First Nations and Métis communities.
- Once they have been approved by all parties, implement First Nations' flood claim agreements in the Qu'Appelle Valley.
- Implement Water Management Agreements with Qu'Appelle Valley First Nations.
- Continue consultations with Fishing Lake First Nation on the Fishing Lake Emergency Channel Project.
- Engage First Nations, Métis and stakeholders in the Mackenzie River Basin in discussions on development of the Mackenzie River Basin Bilateral Agreement with Alberta.
- Continue to consult with First Nations and Métis communities where the Water Security Agency is planning work that may impact aboriginal or treaty rights.
- Work with Source Water Protection Planning groups to engage and involve First Nations communities in activities in local and relevant watersheds.

Strategy

Improve the effectiveness and efficiency of the Agency's legislation, policies and services

Key Actions

- Initiate development of modern and comprehensive water legislation.
- Continue Environmental Code development on Water Security Agency-related activities.
- Continue to conduct Lean reviews of programs and services to identify and implement gains in efficiency.
- Continue strategic risk assessment as part of the annual planning cycle.

Photo Credit: Ministry of Parks, Culture and Sport, Greg Huszar Photography, Fishing on Jan Lake

Strategy

Attract, retain and build professional staff by supporting employee development, stimulating and directing employee engagement and enabling employees to succeed

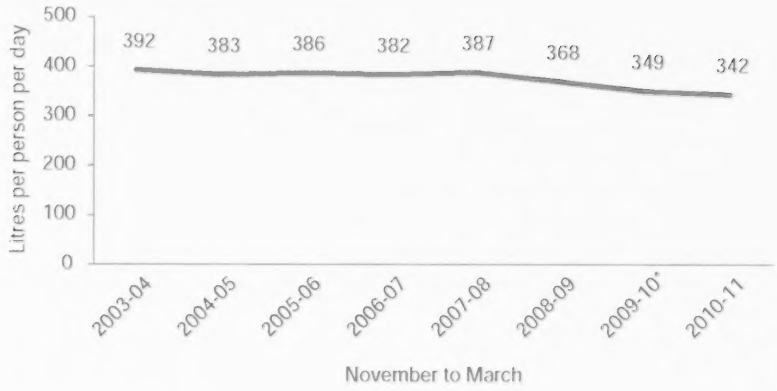
Key Actions

- Continue implementation and monitoring of the five year Human Resources Management Strategy to ensure consistency with the goals and principles of the Water Security Agency, the strategic direction for the public service provided by Executive Government and that the delivery of human resource functions consider best practices with a focus on client service as a priority.
- Implement phase 1 of the Performance Management project for management employees, including providing training and support, and monitoring participation.
- Implement the on-boarding program for new employees, finalize the Recruitment Framework and ensure the Agency's recruitment activities are undertaken in accordance with best practices.
- Continue support of staff training, skills enhancement, and career development programs as a priority and use employee training and development to support Corporate Succession Strategy initiatives.
- Continue implementation of the Occupational Health and Safety (OHS) Framework which includes undertaking hazard and risk assessments for key corporate branches, ensuring the implementation of the OHS employee orientation process is consistent and integrated with the corporate on-boarding program, and that the implications of *The Saskatchewan Employment Act* (tabled December 4, 2012) are determined and integrated, as required, into the corporate OHS Program.

Performance Measures

Measure

Winter municipal per capita water consumption



Measure Description

This measure indicates water conservation as it relates to municipal and First Nations community water use, including use in the home, in businesses, and for public services such as firefighting, road building, public pools and rinks. It also includes water lost due to system leakage. Only the winter consumption measure is presented, as it more clearly shows trends in municipal water use. Data is derived from community water use records, submitted annually to the Water Security Agency, and compared to population records from current Ministry of Health data, or to current census data where Health data is not available.

Residential water conservation is a critical component of overall municipal water conservation. In 2006, residential water use in Saskatchewan accounted for an estimated 44 per cent of the total annual municipal use. Toilets alone account for an estimated 30 per cent of in-home residential use. The Water Security Agency promotes conversion to low flow toilets through the Provincial Toilet Replacement Rebate Program and raises awareness of additional water conservation opportunities through direct mail and online resources like the Family Water Use Calculator (to be updated in final plan).

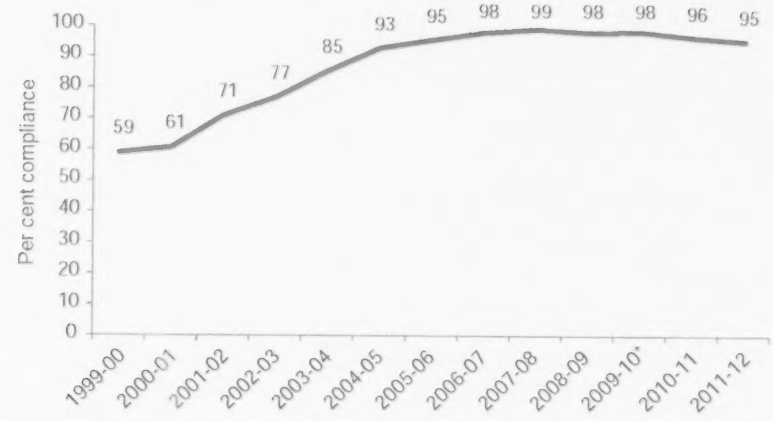
The data indicate an apparent downward trend in municipal water use in recent years. As the Water Security Agency's current water conservation initiatives are focused on promoting residential conservation practices, they should directly influence this measure.

This measure supports the following strategy: **Ensure the sustainability of our surface and ground water supplies**.

Photo Credit: Ministry of Parks, Culture and Sport, photo by Paul Austring, Buffalo Narrows

Measure

Drinking Water Quality Standards Compliance



Source: Water Security Agency; SEEMS Database

Measure Description

The drinking water quality compliance indicator is an average of compliance with disinfection and bacteriological standards, both of which measure compliance with drinking water quality standards. This indicator looks at both the results of bacteriological water quality monitoring and the level of disinfectant present in drinking water and is a good predictor of the safety of drinking water. Compliance with drinking water quality standards for disinfection and bacteriological quality is important as microbial contamination in water supplies can quickly result in significant illness. Proper disinfection is an important way to ensure safe drinking water and prevent the outbreak of water-borne diseases. The indicator reports on the actions of the Water Security Agency in addressing risks to the health of people and the environment and key actions related to ensuring safe and sustainable drinking water. The accuracy of this indicator is fully dependent on accurate testing and reporting by regulated waterworks operators.

The drinking water quality compliance indicator has been very good for the past few years and has remained relatively stable, with an average compliance rate of 97 per cent for the past five years, above the 10 year average of 93 per cent. The Agency will continue to reinforce the need to comply with disinfection requirements and proper reporting of disinfection values in 2013-14 and beyond to ensure increased awareness. Ongoing inspection and education awareness initiatives with waterworks owners and operators are planned to sustain good performance in achieving water that is safe from bacteriological threats and meets disinfection standards.

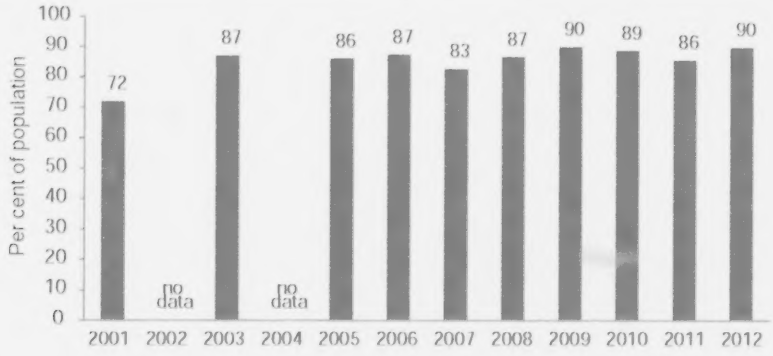
Key risks to achieving this measure include an inability of waterworks owners or operators to comply with standards and operator certification requirements (such as a lack of staff, understanding, overall planning capacity or financial resources), catastrophic events that effect drinking water quality (such as major flooding or equipment failure) and new/evolving standards that change the base requirements.

This measure supports the following strategy: **Ensure our drinking water is safe**.

Photo Credit: Ministry of Environment

Measure

Drinking water quality satisfaction



Source: Ministry of Environment Polling Results

Measure Description

The Drinking Water Quality Satisfaction indicator is based on the results of annual polling of Saskatchewan residents on their level of confidence in the quality of their drinking water supply. The measure is the percentage of respondents who indicated that they are very or somewhat confident in the quality of their tap water. This indicator reflects upon the success of the Water Security Agency in advancing safe drinking water at supplies across the province including the municipalities, pipelines and large commercial water systems.

The drinking water quality satisfaction indicator has been greater than 80 per cent since 2003. Based on a May 2012 poll conducted by the Ministry of Environment, 89.7 per cent of people strongly agreed or agreed that they are confident in the safety of their drinking water. An increase of 4.2 per cent from 2011 to 2012 may be related to the protective efforts undertaken in response to waterworks upsets in communities such as Prince Albert in March 2012. The importance of drinking water quality and public opinions of water quality in the province has been recognized by the Water Security Agency and will continue to be closely monitored.

Ongoing attention to actions such as consumer education efforts, waterworks inspections, media coverage of water contamination events affecting larger centres, implementation of water quality standards, water workshops and consumer notification will help to maintain a high level of public confidence in the safety of drinking water in the future.

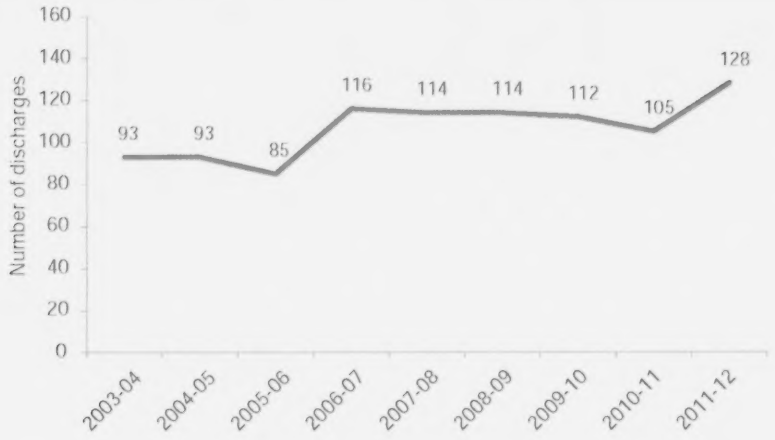
Key risks to achieving this measure include: lack of public knowledge about the effectiveness of drinking water quality compliance requirements and efforts; major climatic events that impact base survey water quality and quantity (such as sustained droughts or major flooding); and upsets or significant problems at a waterworks for a major centre in or beyond the province that may influence the confidence of a significant portion of population in Saskatchewan. There is also some risk in how the survey is constructed (for instance, the order in which questions are asked and the possibility that other topics covered in the survey might influence the respondents' answers).

This measure supports the following strategy: **Ensure our drinking water is safe**.

Photo Credit: Tourism Saskatchewan, Greg Huszar Photography, Jones Peak, near Eastend

Measure

Sewage effluent discharges that represent a risk to source waters



Measure Description

The number of sewage effluent discharges that represent a risk to source waters is a direct indication of the potential for source water contamination due to poor wastewater treatment. This measure now incorporates the need for future compliance with the Canada-Wide Strategy for Municipal Waste Water Effluents (MWWE) standards. This measure is selected since it is the most direct measure of the number of potential significant contamination point sources affecting a range of water uses.

As of March 31, 2012, approximately 128 wastewater systems have been identified as having a discharge that may reach a surface water body and represent a risk to source waters under certain conditions. Of these 128 systems, up to 93 may require compliance with pending Canada-wide Standards for Municipal Waste Water Effluent (MWWE) or the Wastewater System Effluent Regulations (WSER) developed pursuant to the federal Fisheries Act. The final number of wastewater systems, which must be managed to the MWWE and WSER standard, will be finalized once an administrative agreement is developed between the Water Security Agency and Environment Canada.

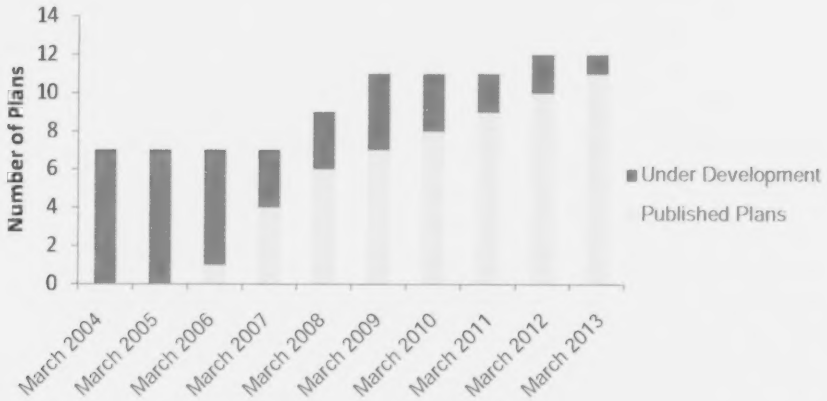
Growth in Saskatchewan communities is also placing additional pressure on sewage infrastructure as some communities were at treatment and/or storage capacity. On an annual basis, Agency staff reviews the quality of effluent from each regulated sewage works. Reduction of ammonia and chlorine residual emissions within treated wastewater effluent, sewage works capacity or other treatment capability issues typically involve significant planning, investment and construction. Therefore, it can be expected that reductions in the number of works, which represent a risk to source waters, will be a time consuming process. Work to resolve problematic wastewater systems will continue for the foreseeable future.

This measure supports the following strategy: **Ensure wastewater is effectively managed**.

Photo Credit: Ministry of Parks, Culture and Sport, Greg Huszar Photography, Evergreen Golf Course

Measure

Number of source water protection plans under development and published



Measure Description

This measure is of interest to government as it provides an indicator of progress towards the protection of source water, thereby maintaining sustainable water supplies available to support our growth, a healthy environment and our quality of life. Source water protection plans are developed at a watershed or aquifer level by local advisory committee representatives, with watershed plans directed at protection of surface water and aquifer plans directed at groundwater. Completed plans set water management priorities and identify emerging water issues.

The Water Security Agency leads the planning process, directly influencing this measure. Successful completion of source water protection plans is dependent on the commitment and ability of the local committee members to achieve a consensus on recommendations.

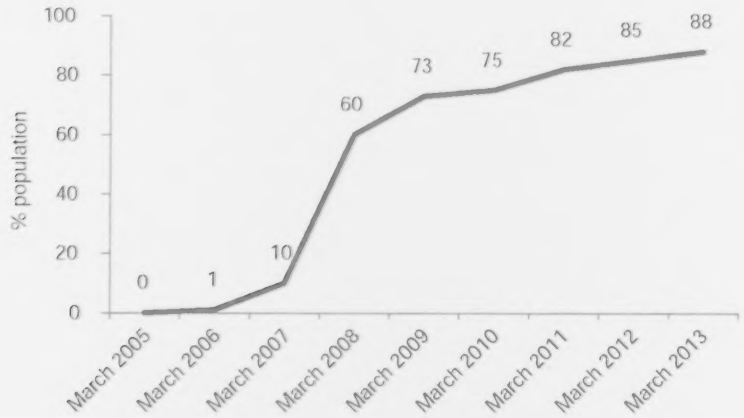
Originally, the Water Security Agency initiated seven plans and, as plans were completed and staff became available, additional planning processes were initiated. The measure illustrates that the first plan was completed in year three, and the numbers reflect that planning processes are consistently coming to completion. Information used in this performance measure is derived from Water Security Agency program files.

This measure supports the following strategy: **Ensure water quality, aquatic habitat and aquatic ecosystem function is sustained**.

Photo Credit: Ministry of Parks, Culture and Sport, Devona Hill Photography, Rolling Pines Golf and Country Resort

Measure

Proportion of provincial population covered by a completed source water protection plan



Measure Description

This measure provides meaningful context to the number of plans by adding the percentage of the population covered. The measure indicates that the Water Security Agency targeted early planning efforts at areas of highest population, and that the majority of the province's population (88 per cent) lives in an area where a planning process has been completed. Population data is derived from 2011 census of Canada data.

This measure supports the following strategy: **Ensure water quality, aquatic habitat and aquatic ecosystem function is sustained**.

Photo Credit: Ministry of Parks, Culture and Sport, Davin Andrie, Hunt Falls

Measure

Total number of source water protection plan key actions underway or complete in the province

Measure Description

Source water protection plans identify key actions needed to protect source water. As actions are undertaken, the degree of protection of source waters within the watersheds and aquifers is expected to increase, and water threats to be minimized.

Each key action specifies the organization(s) responsible for implementation. Local implementation groups lead or influence others to implement actions and submit reports on progress to the Water Security Agency, which are used to develop this measure.

This measure illustrates the number of key actions underway or complete. Since the first plan was completed in 2006, 360 watershed protection actions have been undertaken within the planning areas. As new plans are completed, additional actions are identified, thus the total number of actions has been increasing over time.

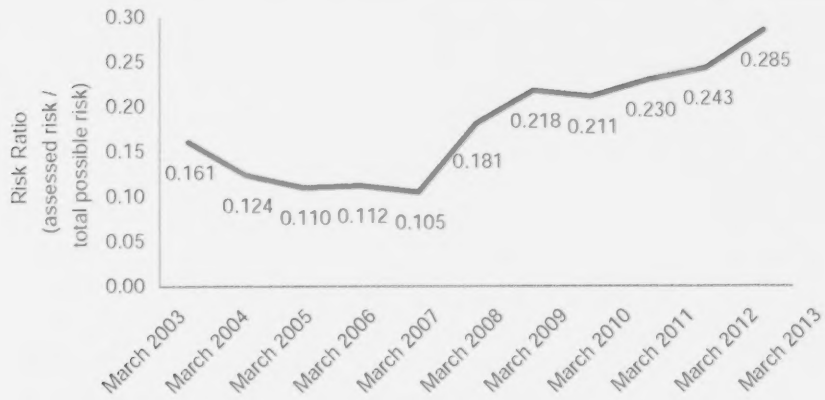
While the Water Security Agency provides funding and technical advice to the local implementation groups, it does not have direct control over completion of the majority of the identified actions and thus has limited influence over the measure.

This measure supports the following strategy: **Ensure water quality, aquatic habitat and aquatic ecosystem function is sustained**.

Photo Credit: Ministry of Parks, Culture and Sport, Greg Huszar Photography, Over the Hill Orchards

Measure

Risk associated with Water Security Agency dams



Measure Description

This graph shows the Water Security Agency's progress in upgrading its dams to acceptable standards, and the overall risk associated with these works. As an intermediate outcome measure, the Water Security Agency uses a ratio of the assessed current risk to the total possible risk to establish targets and measure progress in reducing risk associated with its dams. Risk, defined as the likelihood of a failure multiplied by the consequences of a failure, has been assessed in relative values. The Assessed Current Risk is determined by multiplying the Failure Rating and the Consequence Rating for each structure.

The information used to determine failure likelihood values comes from a variety of sources including: annual inspections; internal and external dam safety reviews; design and assessment studies; issue identification by site staff/ project operators; and review of dam performance monitoring data. Consequence ratings are assessed for each structure and based upon an estimation of life safety, economic damages and restoration costs in the case of a failure.

A lower ratio indicates safer infrastructure, with a ratio of zero indicating no current assessed risk. Numerically the risk ratio can be expressed as:

Risk Ratio = Assessed Current Risk / Total Possible Risk

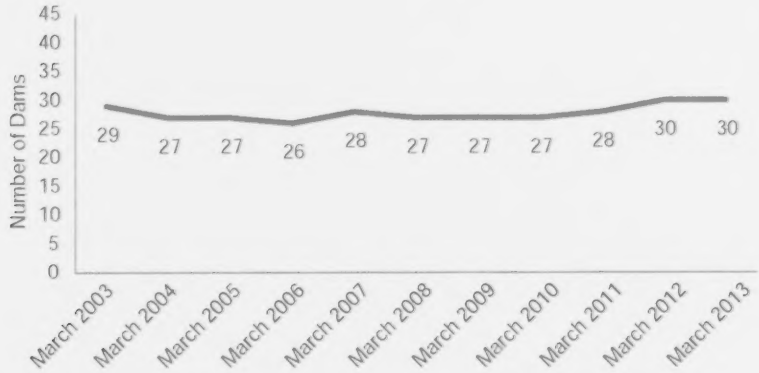
The risk ratio rose in 2012-13 again, principally due to increased assessed risks at some of the Water Security Agency's Extreme and High Consequence dams.

This measure supports the following strategy: **Ensure Water Security Agency infrastructure safely meets water supply and management needs**.

Photo Credit: Saskatchewan Watershed Authority, photo by Jim Kroshius, Katepwa Weir

Measure

Number of dams requiring upgrades to meet safety and operational criteria



Measure Description

This measure quantifies the number of Water Security Agency dams which require upgrades to meet the provisions of the Dam Safety Guidelines (2007) published by the Canadian Dam Association. The Water Security Agency is responsible for the operation and maintenance of 45 dams and, like all provincial governments and major utilities across Canada, manages its works generally in accordance with these guidelines. Depending upon the dam, a failure could have significant economic and safety consequences. However, unlike the risk ratio, this measure does not indicate the severity of the identified deficiencies. This measure is useful in gauging progress made over time to reduce the number of deficient dams. Dams assessed to have a Failure Likelihood of three or greater (maximum possible = 29) are deemed to be deficient dams. The information used to determine Failure Likelihood values comes from a variety of sources including: annual inspections; internal and external dam safety reviews; design and assessment studies; issue identification by site staff/project operators; and review of dam performance monitoring data.

The number of dams requiring upgrades remained at 30 structures.

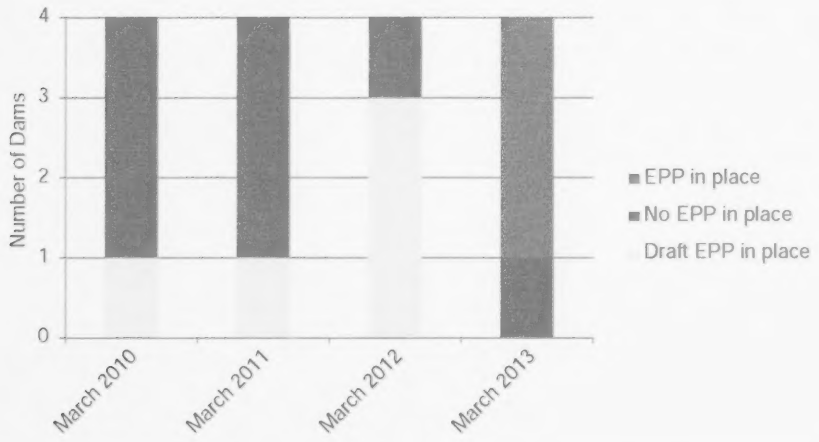
As with the previous measure, this measure is of interest to the Government as the upgrading and safety of dams is fundamental to public safety and to dependable water supplies to support the economy.

This measure supports the following strategy: **Ensure Water Security Agency infrastructure safely meets water supply and management needs**.

Ministry of Parks, Culture and Sport, Greg Huszar Photography, Motherwell Homestead National Historic Site of Canada

Measure

Number of required Emergency Preparedness Plans for the Water Security Agency's four major dams



Measure Description

In the event of an emergency, a quick and knowledgeable response to the situation can potentially save lives and reduce damages. This is a measure of the number of required emergency preparedness plans that are in place and are current for the Water Security Agency's four major dams.

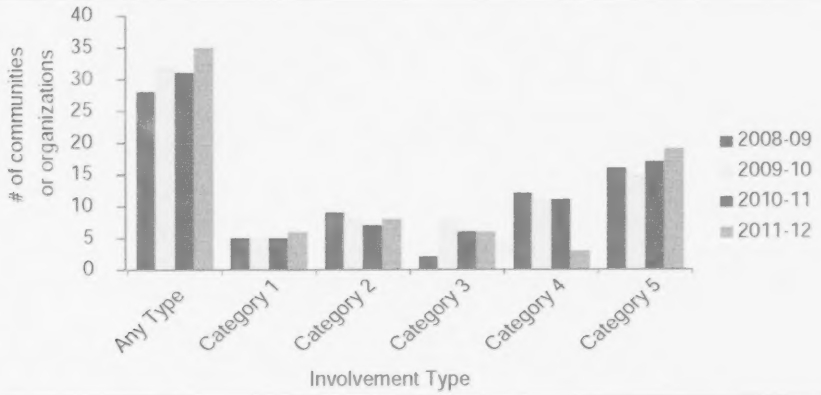
Emergency preparedness plans for three of the Water Security Agency's four major dams were finalized during the year. Those for Rafferty and Alameda Dams were distributed and reviewed with emergency responders.

This measure supports the following strategy: **Ensure Water Security Agency infrastructure safely meets water supply and management needs**.

Photo Credit: Saskatchewan Watershed Authority, photo by Jim Kroshius, Five Mile Weir

Measure

Number of First Nations and Métis communities or organizations with whom the Water Security Agency is involved



Measure Description

First Nation and Métis interest in water availability and quality is continuing to grow and may result in conflicts over use, especially in areas with water shortages. Proactive relationship building will help reduce future conflicts and contribute toward positive water management alliances. The number of communities and / or government bodies with whom the Water Security Agency, at a minimum, has a two-way dialogue, is a simple measure of the Water Security Agency's efforts to build relationships. Water Security Agency staff report this information on an annual basis, and the comprehensive results are summarized here. For this measure, the total number of communities the Water Security Agency is directly involved with is presented, along with a breakdown according to categories of involvement, as follows:

Any type: This is the total number of First Nations and Métis communities or organizations the Water Security Agency is involved with in any of the categories. The Water Security Agency may have more than one category of involvement with any given community or organization; therefore, this does not represent a sum of the five broken-out categories.

Category 1. Formal Province – First Nations / Métis agreements or negotiations: discussions underway or agreement in place

Category 2. Formal consultations (activities specific to legal duty to consult requirements)

Category 3. Advisory board or committee participation (watershed / aquifer planning or infrastructure operation): representation on Water Security Agency-led planning or advisory committees

Category 4. Community-based projects / initiatives: preliminary discussions, under development or already in place; Water Security Agency – First Nations / Métis projects

Category 5. Dialogue / information exchange / relationship-building: informal discussions with community / organization representatives, including feedback received about Water Security Agency initiatives

Photo Credit: Ministry of Parks, Culture and Sport, Greg Huszar Photography, Nesslin Lake Campground

Measure Description (Continued)

The 2011-12 measurement results indicate the Water Security Agency was directly involved with 35 First Nations and Métis communities or organizations, with the majority of involvement falling in the category of dialogue, information exchange, or relationship-building activities (Category 5). This is a positive picture, as these types of informal relationships support the Water Security Agency's ability to engage positively in more complex arrangements. The Water Security Agency is working to grow the overall numbers, paying particular attention to activities that involve First Nations or Métis communities and organizations in advisory-type roles (Category 3).

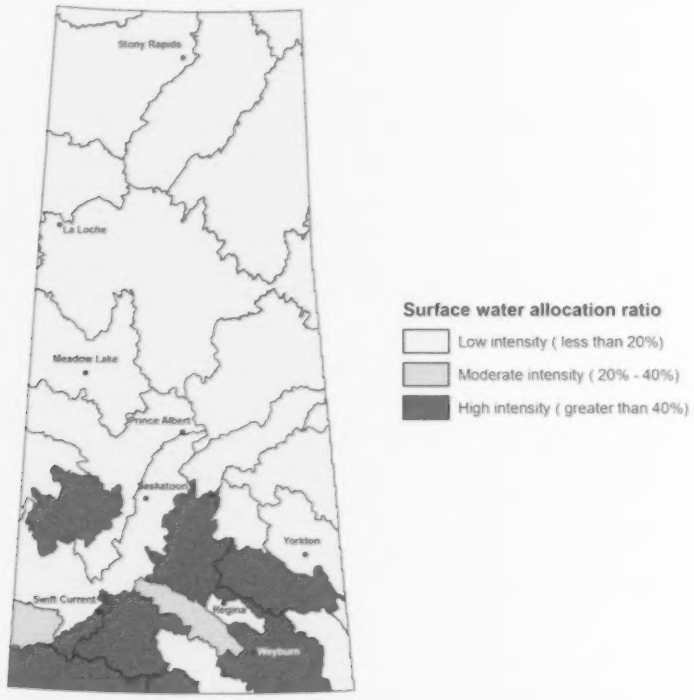
This measure supports the following strategy: **Work toward reconciliation in water management while meeting legal responsibilities for consultation and accommodation regarding First Nations and Métis communities**.

Photo Credit: Saskatchewan Watershed Authority, SWA employees, water quality monitoring, Moose Jaw River

Measure

Surface water availability

Saskatchewans twenty-nine watersheds



Surface water allocation ratio by watershed

Measure Description

This measure is of interest to the government as an indicator of surface water sustainability. It illustrates the percentage of natural flow (volume of water in our rivers) that is currently allocated for various human uses within a watershed.

Surface water allocation is the volume of water licensed for a project that the project is allowed to withdraw from a surface waterbody. This measure shows to what extent surface water resources are currently allocated, and provides information on the intensity of surface water allocation at a watershed level. The values used in this measure don't signify the actual water used or consumed, but rather the amount of water that is allocated for use.

Saskatchewan has been experiencing unprecedented economic and population growth and it is expected to continue for years to come. As communities and the economy grow, pressures on existing water supply and infrastructure will also increase.

Photo Credit, Ministry of Parks, Culture and Sport, photo by Paul Austring, Holy Trinity Anglican Church, Stanley Mission, Lac La Ronge Provincial Park

Measure Description (Continued)

The surface water allocation ratio by watershed figure illustrates that eight watersheds in southern Saskatchewan currently have a surface water allocation ratio of 40% and have the potential to pose a high risk to water availability if not managed correctly.

For the Qu'Appelle system, the figure correctly shows that allocations are high compared to the natural flow, but the demand is met by water from Lake Diefenbaker. The Qu'Appelle is thus unique in that more water than the natural flow is available for allocation to users.

To ensure allocation is sustainable at a watershed level, the Water Security Agency is in the process of:

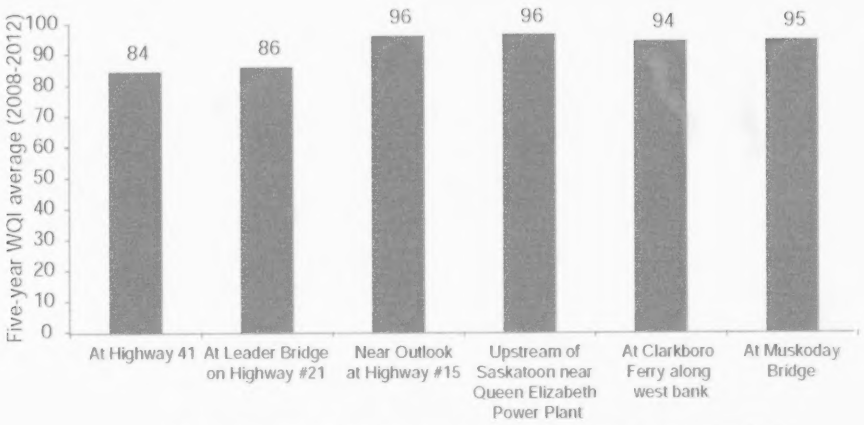
- Developing a modern system of water allocation, including a new allocation policy and regulations;
- Reviewing existing water rights licences and assessing current water use; and,
- Determining, at a watershed level, the existing use of water, level of protection of environmental flows, much water is available for future allocation, and identify areas where water scarcity may be a factor.

This measure supports the following strategies: **Ensure the sustainability of our surface and ground water supplies; Ensure adequate water information is available to support decision making; Work cooperatively with other governments and government agencies to ensure effective water management in Saskatchewan; and Engage and inform stakeholders and the public regarding water issues**.

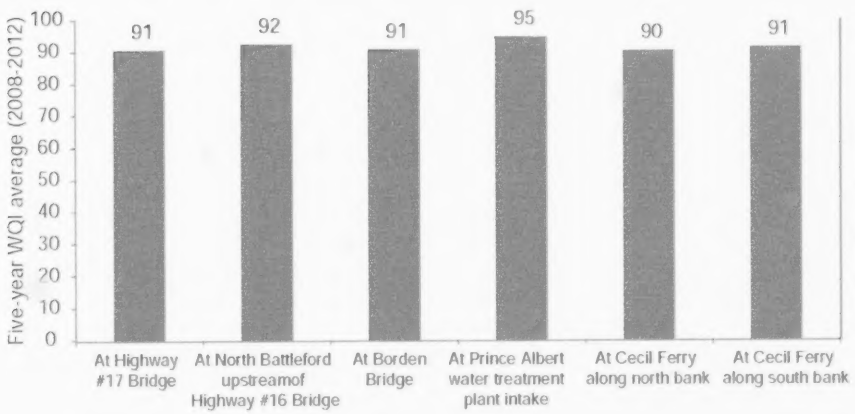
Photo Credit: Saskatchewan Watershed Authority, photo by Vicki East, Rafferty Reservoir

Measure

Surface Water Quality Index

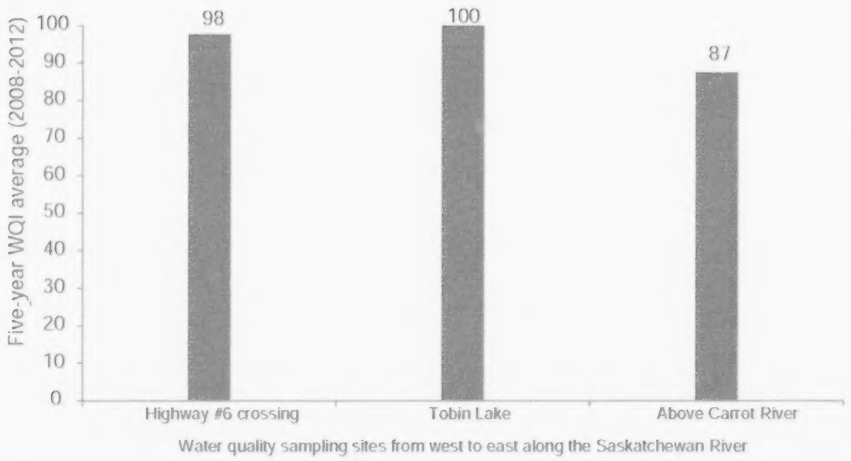


Water quality sampling sites from west to east along the South Saskatchewan River



Water quality sampling sites from west to east along the North Saskatchewan River

Photo Credit: Tourism Saskatoon, City of Bridges



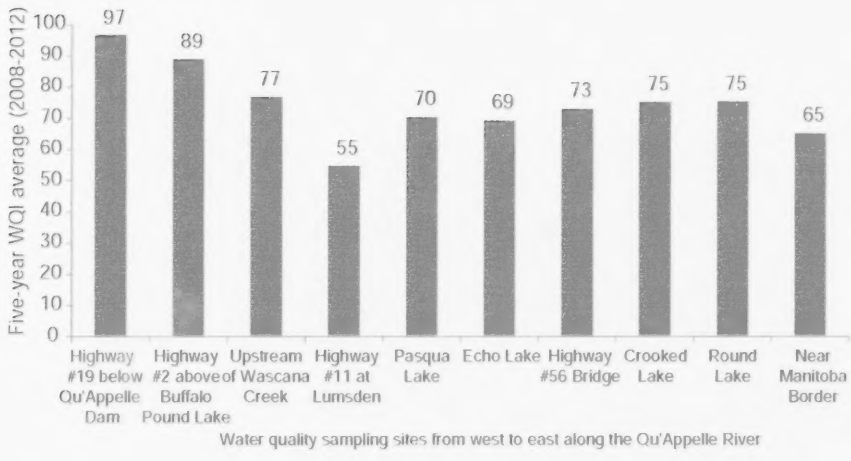
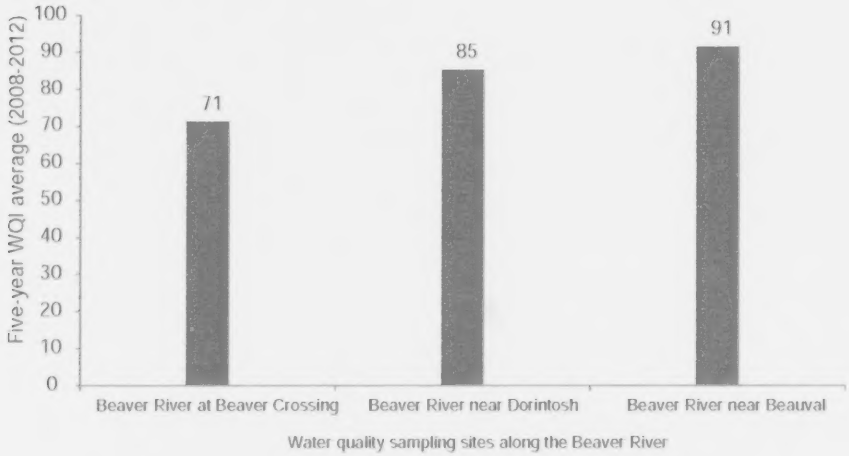
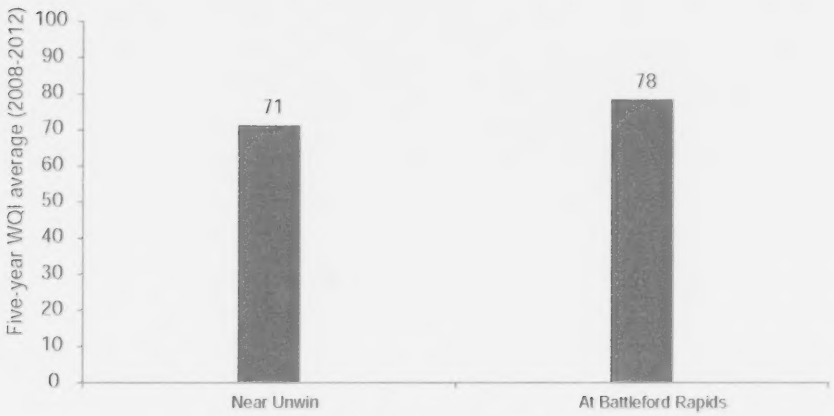


Photo Credit: Ministry of Parks, Culture and Sport, Hans-Gerhard Pfaff, Downtown Regina

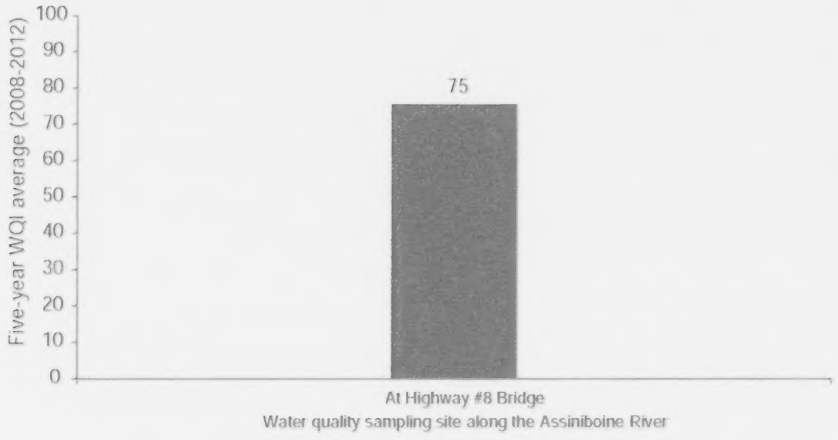


Water quality sampling sites along the Beaver River



Water quality sampling sites from west to east along the Battle River

Photo Credit: Ministry of Parks, Culture and Sport, Hans-Gerhard Pfaff, Saskatchewan Legislative Building



Measure Description

The Surface Water Quality Index is used to evaluate surface water quality in Saskatchewan's major river systems with respect to sixteen variables, including: metals (total arsenic, total chromium, mercury, and total aluminum); nutrients (unionized ammonia, total phosphorous, dissolved nitrogen NO3 & NO2); major ions (dissolved sodium, dissolved chloride, sulphate); bacteria (Fecal Coliforms and *Escherichia coli*); pesticides (2'4-D and MCPA); and field parameters (dissolved oxygen, pH, and Chlorophyll a (for lakes only)). The Water Quality index is an effective means for summarizing a large number of water quality parameters (Canadian Council of Ministers of the Environment. 2005. CCME Water Quality index 1.0. User's Manual. Canadian Water Quality Guidelines for the Protection of Aquatic Life).

The WQI values range between 0 and 100. Once the WQI has been calculated the value can be further simplified by assigning it to one of five descriptive categories:

- **Excellent**: (WQI value 95-100) – water quality is protected with a virtual absence of threat or impairment; conditions very close to natural or pristine levels. These index values can only be obtained if all measurements are within objectives virtually all of the time.
- **Good**: (WQI value 80-94) – water quality is protected with only a minor degree of threat or impairment; conditions rarely depart from natural or desirable levels.
- **Fair**: (WQI value 60-79) – water quality is usually protected but occasionally threatened or impacted; conditions sometimes depart from natural or desirable levels.
- **Marginal**: (WQI value 45-59) – water quality is frequently threatened or impacted; conditions often depart from natural or desirable levels.
- **Poor**: (WQI value 0-44) – water quality is almost always threatened or impacted; conditions usually depart from natural or desirable levels.

The average WQI values between 2008 and 2012 at all sites along the North Saskatchewan, South Saskatchewan, and Saskatchewan Rivers ranged between good to excellent.

Photo Credit: Ministry of Parks, Culture and Sport, Nancy Ackerman, Dancers, Carry the Kettle First Nation

The average WQI values at all sites along Beaver and Battle Rivers were classified as good to fair.

The WQI analysis identified a decreasing trend in water quality along the Qu'Appelle River from the station at Hwy#19, immediately below the Qu'Appelle Dam, to the station at Hwy#11, with a slight improvement at Edenwold, and increased water quality at Hwy#47 between Echo and Crooked Lakes

Along the Assiniboine River water quality is collected from one sample site. The average WQI value for this site between 2008 and 2012 was classified as fair.

This measure supports the following strategy: **Ensure water quality, aquatic habitat and aquatic ecosystem function is sustained; Ensure adequate water information is available to support decision making; Work cooperatively with other governments and government agencies to ensure effective water management in Saskatchewan; and Engage and inform stakeholders and the public regarding water issues.**

Financial Summary

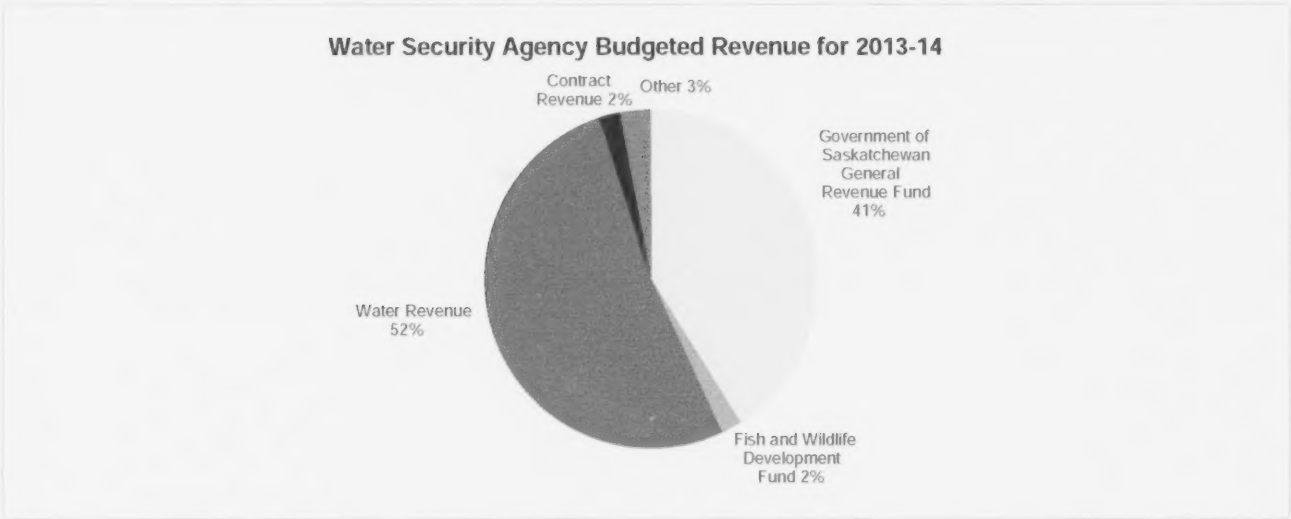
2013-14 Estimates	(in thousands of dollars)
Appropriation	15,480
Expense	15,480
Total Expense	15,480
Total Appropriation	15,480
FTE Staff Complement	220.6
Ministry	

Revenue	(in thousands of dollars)
Government of Saskatchewan General Revenue Fund	15,480
Fish and Wildlife Development Fund	828
Water Revenue	19,408
Contract Revenue	695
Other	1,170
Total Revenue	37,581

Expenditures	(in thousands of dollars)
Corporate Services	5,168
Watershed Planning	954
Water Quality Services	2,560
Partnerships & Plan Implementation	2,442
Water Availability Study	900
Interjurisdictional Water Management & Administration	1,008
Regional Services	7,470
Hydrology and Groundwater Services	3,082
Infrastructure Management	6,201
Drinking Water and Wastewater Management	5,903
Interest	843
Depreciation	5,250
Total Expense	41,781
Deficit for the year	4,200

For more information, see the Budget Estimates at: http://www.finance.gov.sk.ca/budget2013-14

Financial Summary


Water Security Agency Budgeted Revenue for 2013-14
Contract Revenue 2%
Other 3%
Government of Saskatchewan General Revenue Fund 41%
Water Revenue 52%
Fish and Wildlife Development Fund 2%

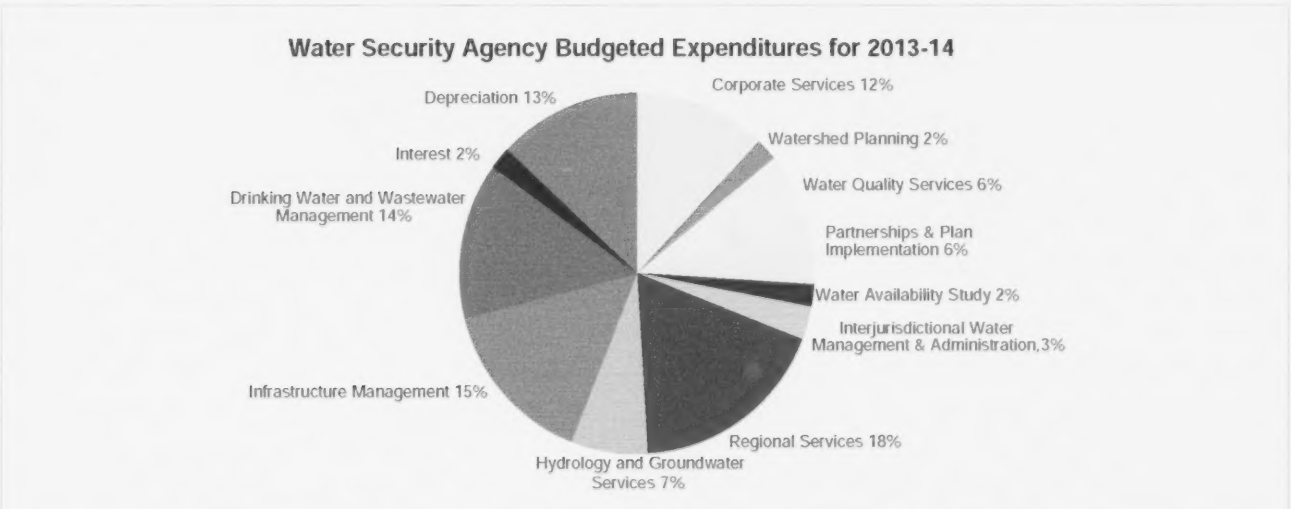

Water Security Agency Budgeted Expenditures for 2013-14
Depreciation 13%
Corporate Services 12%
Watershed Planning 2%
Interest 2%
Water Quality Services 6%
Drinking Water and Wastewater Management 14%
Partnerships & Plan Implementation 6%
Water Availability Study 2%
Interjurisdictional Water Management & Administration,3%
Infrastructure Management 15%
Regional Services 18%
Hydrology and Groundwater Services 7%

Photo Credit: Tourism Saskatchewan, David Buckley, Canoeing, MacFarlane River

Highlights

This first budget for the Water Security Agency completes changes to water management to ensure protection of water quality, maintenance of aquatic habitats and sustainable water supplies. This includes transfer of drinking water and wastewater, aquatic habitat and water quality programs and 36 FTE's from Ministry of Environment, responsibility for the pumping program and the M1 canal as well as 2 FTE's from Ministry of Agriculture and responsibility for limited scope pipelines and 1fte from Ministry of Health. These changes move the province forward to address the challenges of growth and improve service to citizens.

The following are the most significant initiatives within this budget.

- The Government is addressing growing demand from rural municipalities and conservation and development authorities for assistance with maintenance of drainage infrastructure with an increase to the Water Control Grant Program of $500,000. This brings the total budget for maintenance of channels and flood control works to $1,460,000.
- The Water Security Agency will continue implementation of its 10 Year water management infrastructure renewal plan with a planned capital investment of $11,907,000. Major projects include:
  - rehabilitation of the M1 Canal;
  - upgrades to electrical systems and to relieve well drainage conduits at Gardiner Dam;
  - repairs to Tantallon Flood Control Project;
  - work to restore capacity in the Upper Qu'Appelle Conveyance Channel; and
  - rehabilitation of riprap slope protection on Bradwell East Dam.
- An investment of $900,000 in the Water Availability Study to improve knowledge of surface and groundwater supplies to guide water management decisions.
- The Water Security Agency will continue to support implementation of 11 source water protection plans with grants totaling $925,000.

For More Information

Please visit the Water Security Agency website at www.wsask.ca for more information on the Water Security Agency's programs and services.

Front Page Photo Credits

Canola and flax fields	*Biking, Narrow Hills Provincial Park*	*Over the Hill Orchards*	*Saskatchewan Legislative Building*
Photographer, Charles Melnick	*Greg Huszar Photographry*	*Greg Huszar Photography*	*Greg Huszar Photography*